

Title (en)

HEAT EXCHANGER VANE WITH PARTIAL HEIGHT AIRFLOW MODIFIER

Title (de)

WÄRMETAUSCHERSCHAUFEL MIT LUFTSTROMTEILHÖHENMODIFIKATOR

Title (fr)

AUBE D'ÉCHANGEUR THERMIQUE DOTÉE D'UN MODIFICATEUR D'ÉCOULEMENT D'AIR À MI-HAUTEUR

Publication

EP 3789717 A1 20210310 (EN)

Application

EP 19213968 A 20191205

Priority

US 201916562638 A 20190906

Abstract (en)

A heat exchanger includes a stack (106) of flow conduits. Each flow conduit is configured to conduct a fluid. Parting sheets (124) separate adjacent flow conduits in the stack, providing heat transfer between them. Each of the flow conduits includes vanes (110, 112) extending along a vane path and between top and bottom parting sheets. The vanes are separated from one another, thereby creating flow channels. Each flow conduit also includes a plurality of flow modifiers (136), each adjacent to a corresponding leading edge of a corresponding vane, so as to cause a disrupted portion of a fluid flow to be incident upon the corresponding leading edge. Each of the flow modifiers includes an aerodynamic portion and a gap portion. The aerodynamic portion extends from at least one of the top and bottom parting sheets. The aerodynamic portion does not connect the top and bottom parting sheets due to the gap portion.

IPC 8 full level

F28D 9/00 (2006.01); **F28F 9/02** (2006.01); **F28F 13/12** (2006.01)

CPC (source: EP US)

F28D 9/0062 (2013.01 - EP); **F28D 9/0068** (2013.01 - US); **F28F 9/0265** (2013.01 - EP); **F28F 9/0268** (2013.01 - EP); **F28F 9/22** (2013.01 - US); **F28F 13/12** (2013.01 - EP); **F28F 2009/224** (2013.01 - US)

Citation (search report)

- [X] EP 3187809 A1 20170705 - KYUNG DONG NAVIEN CO LTD [KR]
- [A] WO 2013091099 A1 20130627 - DPOINT TECHNOLOGIES INC [CA]
- [A] EP 3234489 A1 20171025 - MAICO ELEKTROAPPARATE-FABRIK GMBH [DE]
- [A] US 2017231115 A1 20170810 - KOBAYASHI TOMOYOSHI [JP], et al
- [A] DE 4325977 A1 19950209 - BALCKE DUERR AG [DE]
- [A] US 2019178585 A1 20190613 - DE BOCK HENDRIK PIETER JACOBUS [US], et al
- [X] WO 2019141513 A1 20190725 - LINDE AG [DE]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

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